

ABSTRACT

An iterative process is used to set the phase prechirp of a WDM optical transport system to a system's optimal level that maximizes the signal quality. A signal degradation factor takes into account linear and non-linear effects along the optical path and is used as a receive end feedback signal to control the phase prechirp level at the transmitter site. By using the FEC corrected errors rate as the feedback signal, optimization of signal quality is performed even when the system is running error free. By using an adaptive phase prechirp transmitter, signal degradation compensation can be also performed on a per wavelength basis to compensate for the residual dispersion slope and to allow optimization of individual channels independently of the net link dispersion value.

This method provides more flexibility when using optical switching in core networks, as it allows path optimization to new physical link connectivity, without requiring any change to the optical components such that, significant signal degradation tuning range for a WDM optical transport system is provided.